The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 7. FEBRUARY 15, 1941. Vol. 53.

POISONING OF SHEEP BY THE CONSUMPTION OF LAUREL LEAVES

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Glasgow. Rutherglen.

Judging from conversations and from occasional passing references in the journals, poisoning of animals by the consumption of laurel leaves must be a not uncommon occurrence. The poisonous nature of laurels has long been recognised, and their frequent presence in shrubberies and hedges would seem to constitute a danger to passing animals. In Scotland many shepherds claim to be familiar with laurel poisoning among sheep grazing near the parks of country estates. Such observations, however, while not entirely without value, are neither precise nor checked by any critical standard, and in the nature of things they remain unrecorded. More specific references to the condition have appeared from time to time, but rather infrequently.

Laurels belong to the group of cyanogenetic plants, containing a glucoside which, in contact with certain enzymes, yields, among other products, hydrocyanic acid. There are several varieties of laurel, and all of them appear to have this property in greater or less degree. In addition, the leaves contain an acrid essential oil which, in cases of poisoning, is said to cause inflammation of the gastro-intestinal tract. (Lander: "Veterinary Toxicology," and "Wooldridge's Encyclopaedia.")

Lander records instances of poisoning of ewes and a horse by cherry laurel (*Prunus laurocerasus*), and remarks that the symptoms showed that some irritant was present in addition to the cyanide.

Miller ("Veterinary Dictionary") says, "The exceedingly common ornamental shrub, *Prunus laurocerasus*, has caused poisoning among cattle and sheep on the continent of Europe, but it would appear that the British varieties are not so toxic."

There is an interesting article on laurels in the "Encyclopaedia Britannica." Referring to the common or cherry laurel it says, "The leaves . . . are remarkable for their poisonous properties, giving off the odour of bitter almonds when bruised; the vapour thus issuing is sufficient to kill small insects. Cherry laurel water is a solution of the volatile oil. The leaves when cut up finely and distilled yield the oil of bitter almonds and hydrocyanic acid. Sweetmeats, custards, cream, etc., are often flavoured with laurel leaf water, as it imparts the same flavour as bitter almonds; but it should be used sparingly, as it is a dangerous poison, having several times proved fatal. The first case occurred in 1731, which induced a careful investigation to be made of its nature, which was discovered by Schrader in 1802 to be hydrocyanic acid." (The writers understand that the leaves of another variety of laurel, probably the bay or sweet laurel, are now used as a flavouring agent. They are said to have an aromatic and slightly bitter flavour, and to be quite devoid of the dangerous properties of the cherry laurel.)

The instance now somewhat belatedly recorded of what appears to have been laurel poisoning occurred in a batch of 31 ewes grazing in a public park. At 7 a.m. on July 20th, 1936, one of the writers (D. C.) was called to the grazing field to see the ewes, two of them having just been found dead, and a number of others appearing to be seriously ill. At first sight there were no very evident signs of illness among the surviving animals, except that they stood huddled together, showing no interest in their food. Two or three which at the time the message was sent were thought to be on the verge of dying now seemed no worse than the others. Presently, however, a number of them at intervals suddenly began to breathe very rapidly and exhibit jerky movements, staggering, even in some instances falling over. These symptoms varied considerably in severity, and their duration was not more than several minutes, after which they rapidly abated.

The field was an old permanent pasture which had not been grazed down in the early part of the season, and on which the sheep had been placed only a week before this outbreak occurred. The grass was coarse and in July it had seeded. In consequence there was a scarcity of that young leafy herbage which is attractive to sheep. It is not surprising, therefore, that the animals had made a search for more attractive food, and in doing so they had worn a track around the inside of the enclosing fence. The field was enclosed by an iron fence of common pattern, and outside the fence, but within reach of the sheep, a hedge of laurel extended for about half the circumference of the field. It was observed that the path worn by the sheep inside the fence was most obvious in the vicinity of the laurel hedge. It was also observed that parts of many of the leaves were broken off as if they had been bitten. Water was obtained from a self-filling trough in satisfactory condition. Although the weather on this particular morning was fine, there had been much rain during the previous day—a circumstance which, as will appear later, may have had an important bearing on the case.

Since the symptoms corresponded closely with those of poisoning by hydrocyanic acid, and careful survey disclosed no other cause, a provisional diagnosis was made of poisoning due to the consumption of laurel leaves. The blood of the two sheep which had died was examined for anthrax, with negative results. The next step was to remove the animals from the field, and by the co-operation of the Glasgow Corporation veterinary staff pens were reserved for them adjoining the city abattoir, where they could be kept under observation. To these they were immediately transported by float. While the sheep were being herded towards the float one of them developed very acute symptoms, fell over in convulsions, and was left with the expectation that it would be dead before the loading of the survivors was completed. A few minutes later it came along and joined the others, apparently little the worse for its experience.

Some of the leaves were taken from the hedge and submitted for identification to Messrs. Austin & McAslan, nurserymen, Glasgow, who pronounced them to be the common or cherry laurel, *Prunus laurocerasus*.

During the next few days the sheep at the abattoir were kept under very close observation. The writers (W. R. had been appointed to examine the sheep by the owners of the field) were in frequent attendance, and Mr. Mcleod and Mr. Braid, of Glasgow Corporation Veterinary Department, also saw the animals on many occasions. Shortly after admission to the abattoir another of the ewes died quite suddenly in a violent convulsion.

Post-mortem examination of the three which had now died revealed no definite lesions, but recognisable portions of laurel leaves in varying amounts and varying degrees of maceration were found in the rumens. Samples of the stomach contents were taken to Messrs. Tatlock & Thomson, Analysts, Glasgow, who advised, however, that the question of analysis should be deferred until the significance of the leaves in the stomach had been more fully determined.

It does not seem necessary to describe in other than general terms the symptoms which were subsequently shown. What strikes the writers as interesting and important is that for five days symptoms kept appearing in different sheep, in many of them recurring several times. Presumably the explanation of this latter effect is that liberation of the poison would not be continuous, but dependant on the time when separate small portions of leaves reached a certain stage of digestion.

The general picture was of short, sharp attacks, with quiet intervals lasting a variable number of hours. Usually the first indication of an attack was rapid, jerky breathing. This was followed by twitching movements and staggering, and sometimes by attempts at vomiting, although actual vomition was never seen. It was always impossible to foresee the course of an attack when it started, because some of the sheep recovered quickly without getting beyond this first stage, while others just as speedily passed on to convulsions and impending death. During the first day five of the severe cases were slaughtered.

In the periods of quiescence nothing specifically remarkable was to be seen. The sheep looked dull and although some of them nibbled absently at the hay which was always before them, it would be correct to say that they were off their food. Sheep even in good health when brought in from pasture might show some reluctance to eat hay, and that should be taken into account in assessing the appetite in this case, but, on the other hand, these sheep had certainly been eating laurel leaves, which might be thought a less attractive change of diet than hay. Temperatures in the main showed little departure from normal. Regarding the state of the bowels it is difficult to write with strict accuracy, but the tendency was towards constipation. The same difficulty of accurate statement applies to rumination. Irregular rumination was seen. Whether all the sheep were ruminating irregularly, or some not at all, cannot definitely be said. The following few days were each a repetition of the first, with a number of sheep being slaughtered every day on the appearance of severe symptoms. By the fifth day there were only eight of them left, and since in these the recurrence of symptoms persisted, it was decided to slaughter the lot. While it would have been interesting to see the cases out to the end, in order to find just how long the symptoms would continue and how many sheep would survive, other factors had to be taken into account, which have nothing to do with this narrative.

In every instance except these last eight a *post-mortem* examination was made, and the contents of the stomach were searched for unusual constituents. The *post-mortem* examinations showed either no macroscopic lesions at all, or changes so indeterminate that they could not be accorded the attributes of causation without further investigation. There was none of the inflammation of the gastro-intestinal tract mentioned by Lander. Pieces of laurel leaf of various sizes were found in the rumens of a number of the sheep, while in others no recognisable portions of leaf could be seen. This does not necessarily mean that no leaf was present, but only that if any was present it had been reduced to portions too small to be recognised by the unaided eye.

Although it appeared from the beginning as if the laurel leaves were indicated as the source of the trouble the possibility of there being some other causal agent could not be overlooked. On the third day, therefore, the Animal Diseases Research Association was asked to assist in the investigation. In response, Dr. W. S. Gordon and Mr. D. R. Wilson, of Moredun Institute, arrived, inspected the sheep and the field in which they had been grazing, and took away for the purposes of their examination various samples, including leaves from the hedge surrounding the field, and one of the affected sheep alive. The work done with this material is described in a separate paper by Wilson and Gordon which also appears in this issue.

It will be seen from the paper that the laurel leaves when minced and given in fluid proved definitely poisonous to sheep, but the experiments, admittedly limited in their scope, did not show that dry, unmixed leaves were poisonous. Moisture, of course, is a necessary factor in the production of hydrocyanic acid from glucoside and enzyme, and although sufficient moisture is likely to be already present in the rumen, it is possible that liberation of the acid will be more rapid if the leaves are already wet at the time they are eaten. An analogy to this may be seen in the poisoning of young cattle by hydrocyanic acid generated from linseed cake, when, as is well known, the danger is greatly increased if the cake is given in a mash. The weather conditions at the time when this outbreak

happened have already been mentioned: there had been rain on the previous day, and when the illness was discovered in the morning the field and hedge were still soaking. One of the contributory conditions, therefore, appears to have been fulfilled.

It is rather remarkable that all, or practically all, of these sheep had apparently eaten laurel leaves in quantity sufficient to produce toxic effects. That being so, it is perhaps more remarkable still that the same owners had grazed sheep in that field for 30 years, during which time nothing had happened to arouse suspicion. It may be that in previous years the grazing was in better condition, offering less temptation to the sheep to indulge adventurous appetites. Another thing that should not be overlooked is that this is a well-kept public park, where hedges are regularly trimmed, and perhaps it was unusual for the laurels to be within reach of the sheep in such abundant quantities as to cause several deaths. An occasional death might be due to the consumption of laurels, but over a period of years the loss of a sheep now and again would be accepted as one of the ordinary mishaps of stock-owning, and the cause of death could easily remain unsuspected. Again, every sheep which ate laurel leaves would not of necessity die: the quantity consumed might be too small, or other circumstances, such as the weather, might not be conducive to toxicity. Considering the transient and intermittent nature of the symptoms, the possibility of unobserved cases of non-fatal illness due to this cause cannot be ruled out. The combination of several factors appears to be necessary for laurel poisoning to result, on a large scale at any rate, but it is not unreasonable to think that such a combination would take place oftener than once in 30 years. The writers feel that the question of poisoning by laurels is not yet completely understood, and they offer these notes as a small contribution to its elucidation.

If moisture has appeared as a prominent factor in this particular case it might be less important in others. The possibility of poisoning by dry laurel leaves has not been excluded, and it would be instructive if Gordon and Wilson found it possible to resume their experiments and carry them further in that direction.

Every assistance in this inquiry was readily given by the owners of the sheep, Messrs. William Bosomworth & Sons, Glasgow.

GRASS OUR WEAKNESS OR OUR STRENGTH

"We have some 10,000,000 acres of second and third rate grass—every one of them an obstacle to good farming," observes the Ministry of Agriculture in a recent announcement, which continues: "They are a burden in peace-time. In war-time they are a menace, for they are preventing the nation from putting forth its full agricultural effort. But this weakness can be turned to strength. There are three methods of achieving this. Some fields must be put to the plough now, to produce additional food as quickly as possible. Some fields must be improved to produce better grass, to make up for summer grazing lost from fields already ploughed. Some fields must be made ready now to turn over to productive crops a year or so hence, their fertility increased. A new Growmore leaflet from the Ministry of Agriculture, No. 51, gives some helpful advice on these matters, including some remarks about the application of fertilisers under these conditions. It is obtainable free on application to the Ministry at Hotel Lindum, St. Annes-on-Sea, Lancs."

LAUREL POISONING IN SHEEP

D. R. WILSON and W. S. GORDON

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It is with appreciation of the paper by Professor Robb and Mr. Campbell and of their efforts to determine the cause of the toxaemic condition which occurred in a flock of sheep grazing in a public park in Glasgow, that this report is recorded. While little may be added to their paper it is perhaps appropriate in substantiation of their diagnosis to record here some of the details of that part of the inquiry which was carried out at this Institute and, as a result of that work, to express our views on the subject of laurel poisoning in sheep.

The clinical condition affecting the sheep in question has been described in the paper by Professor Robb and Mr. Campbell. From their paper it will be observed that the characteristic features of the condition were its sudden onset, its rapid course followed either by death or speedy recovery, and the acute respiratory distress which accompanied the attack in affected animals. It is also notable that in some animals more than one attack was observed and, further, that symptoms developed in a few animals as long as five days after they had been removed from the pasture.

In course of consultation there was a concurrence of opinion that the condition represented either a toxaemia, due to a bacterial toxin, or an intoxication resulting from a vegetable or mineral poison. It was agreed, therefore, that an examination of the tissues and body fluids of affected animals be undertaken and that a special inquiry be made into the possibility of poisoning by the laurels to which the animals had had access and which they had consumed. In the latter connection perusal of the literature indicates that grave suspicions have been entertained of the toxic nature of the leaves of *Prunus laurocerasus*, the common cherry laurel. Although cases of poisoning by this shrub, notably in cattle or sheep, have been reported from time to time, few of the records contain many details or complete histories.

Nature of Material Examined

The material examined at Moredun Institute comprised one affected sheep, the viscera of two animals which had been slaughtered on July 23rd, 1936, and the stomach contents of two others which were forwarded by Mr. Campbell. In the order given they are referred to as sheep 1 to 5.

Examination of the Tissues and Body Fluids for Bacteria

Sheep 1.—Blood films obtained from the living animal were examined for the presence of bacteria and yielded a negative result. Thereafter the animal was destroyed for the purpose of making a bacteriological examination of the body tissues. Culture medium was inoculated from the liver, spleen, kidney, heart blood and lung. This medium was incubated aerobically and anaerobically. With the exception of the preparations from the lung, all tubes of culture medium remained sterile after incubation for five days. After two days the cultures from the lung yielded a growth of a saprophytic organism which had no pathogenic significance.

Examination of the Small Intestine Contents for Bacteria and Bacterial Toxins

Sterile filtrates were prepared from the contents of the small intestine of Sheep 1, 2 and 3, and mice were injected intravenously with these filtrates. No bacterial toxins were detected. Cultures were also prepared from the small intestine contents and in no instance was there detected a toxin-producing organism which could be incriminated in the causation of the condition.

Autopsies

Sheep 1.—There was a very slight patchy congestion of the small intestine. The liver was pale, friable and fatty looking. The spleen was slightly enlarged. The heart muscle was pale and there was very slight subendocardial haemorrhage in the left ventricle. No other abnormalities were observed.

Sheep 2.—Liver pale, friable and fatty looking. No other abnormality.

Sheep 3.—Liver pale and friable. A number of pieces of laurel leaves in the rumen. No other abnormality.

Sheep 4.—After drying the sample of stomach contents, 1·15 gm. of dry, undigested laurel leaves were found.

Sheep 5.—After drying the sample of stomach contents, 0·25 gm. of dry, undigested laurel leaves were found.

Histological Examination

Sections were prepared from the livers of Sheep 1, 2 and 3. Well-marked fatty degeneration was present in Sheep 1 and 2 and to a lesser extent in Sheep 3. Sections were also prepared from the cerebrum, medulla, cervical cord and kidney of Sheep 1 but no abnormality was observed in these tissues. While fatty degeneration of the liver appeared to be a feature common to all three cases it is generally recognised that this commonly occurs in acute toxaemic conditions and is of no specific diagnostic significance.

Examination for Mineral Poisons

Two samples which consisted of stomach contents (rumen, reticulum and abomasum) and liver from each of Sheep 1, 2 and 3 were submitted to an analyst for examination. No evidence was obtained that mineral poisons were present.

Feeding Experiments with Laurel Leaves obtained from the Hedge bounding one side of the Field in which the Sheep were grazed

Experiment 1

Sheep 27.—Fasted in a loose box from 10 a.m. on July 24th, 1936, until 4 p.m. the same day. At that time 30½ oz. of leaves were placed in the loose box.

At 11 a.m. on the next day the animal had eaten approximately 3½ oz. of leaves and appeared normal. The same day 4 oz. of leaves were minced, mixed with water and fed by means of a spoon. Ten minutes after feeding, the animal appeared drowsy, the ears drooped and the animal staggered when made to move. The respirations became accelerated and later the sheep fell to the ground and appeared to be in a fit. There was grinding of the teeth and salivation, frequent attempts to vomit, rolling of the eyes and twitching of the muscles of the face and head, galloping movements of the limbs followed by death in about 1½ hours.

On *post-mortem* examination no definite lesions were found but the distinct almond odour of hydrocyanic acid was readily detectable when the surfaces of the lungs and kidney were cut. The liver was not markedly pale and on section showed very slight deposition of fat.

Experiment 2

From July 25th until July 29th, 1936, two sheep, 950 and 928, were confined in a loose box with laurel leaves as the only available food; 20½ oz. of the leaves were consumed but the animals showed no ill-effect. Unfortunately, these animals were not kept under observation for more than one day after July 29th, 1936.

Experiment 3

On August 14th, 1936, Sheep 112 was fed by spoon with 1 oz. of minced leaves in water. Drowsiness followed but no other symptom.

Sheep 109 was similarly fed with 2 oz. of minced leaves. This was followed by drowsiness and staggering symptoms which lasted about three hours.

Sheep 110 was fed with 2 oz. of minced leaves mixed with ferrous hydrate, the antidote to prussic acid. No symptoms were observed.

Sheep 910 was fed with 4 oz. of minced leaves. This animal showed symptoms of inco-ordination of movement, marked respiratory distress and, in a short time, developed a convulsion. It remained in this condition about three hours and thereafter made a gradual recovery.

Sheep 112, which was fed at the same time as Sheep 910 with 4 oz. of the same suspension of minced leaves mixed with ferrous hydrate, showed no symptoms of illness.

DISCUSSION

Arising out of the experiments described above, it is clear that the laurel leaves obtained from the hedge bounding the field in question were toxic to sheep. It is also evident from the nature of the symptoms produced and from the fact that ferrous hydrate appeared to neutralise the toxic effect, that the poisonous product liberated by mincing the leaves was hydrocyanic acid. The close similarity between the symptoms produced in the experimental sheep and those which obtained in the naturally-occurring condition left little doubt that the cause of death in the sheep under investigation was poisoning by hydrocyanic acid liberated from the laurel leaves which the animals were known to have eaten. This evidence, together with the negative nature of the bacteriological examination, the absence of bacterial toxins in the intestine and the inability to detect mineral poisons, made the case for laurel poisoning more complete. There were, however, a few aspects of the inquiry that required further explanation. Thus, in the case of poisoning in a large number of animals in a flock such as occurred in this outbreak, a reason should perhaps be found to explain why so many animals were tempted to eat the poisonous material. Further, although it was clear that quite a small quantity of leaves thoroughly macerated and

administered in fluid rapidly proved toxic, this did not apply when the sheep were allowed to feed on the leaves, and while the weight of leaves—as recorded—was perhaps in excess of what was actually consumed (the sheep had a habit of nibbling the leaves from the stems and scattering them around the floor of their box—some were undoubtedly trampled among faeces and were lost) there was little doubt that the quantities taken were in excess of those found to be toxic when administered in the minced form. It was also difficult to explain those cases which occurred as long as five days after the sheep had been removed from access to the laurel hedge.

In reviewing all the circumstances, the opinion might be formed that the sheep were tempted to eat the laurel hedge because, as will be seen in the paper by Robb and Campbell, the pasture did not provide the type of herbage attractive to sheep. On the other hand, it might be argued that a physiological imbalance or a depraved appetite as a result of a road or rail journey, the normal exploratory habits of sheep when removed to strange surroundings, or even their imitative habits, may explain why so many of the animals should eat such an unattractive material as laurel leaves. Further, the weather conditions described may possibly have had a bearing on the case since Professor G. Henslow, in "Poisonous Plants," indicates that laurel leaves gathered in wet and cold weather are more poisonous than those gathered in hot and dry weather. An explanation of the delayed action of the poison which occurred in some cases may be found in the fact that the ruminant makes an imperfect mastication when it prehends its food and the solid matter passes to the rumen. There was direct evidence that the laurel leaves had not been completely macerated when prehended since portions of the leaves, sufficiently large to be identified, were observed in the rumen contents. It is conceivable that when rumination occurred and the laurel leaves were completely macerated by mastication and mixed with saliva, the development of symptoms followed by death, or symptoms followed by recovery, would depend on the quantity of leaves contained in a particular bolus of rumen contents regurgitated for mastication. At that stage the fluid portion, now containing liberated hydrocyanic acid, would pass to the abomasum and after absorption symptoms would rapidly follow. Such a hypothesis would also account for those cases in which symptoms appeared several times at intervals in the same animal.

The experiments in feeding dry leaves as the sole diet to three sheep were unsatisfactory owing to their limited nature, to the fact that the sheep possibly were not kept under observation for a long enough period and to the fact that the very nature of the changed conditions and limited diet possibly led to irregular or suspended rumination. Further experiments in this connection would be necessary before satisfactory conclusions could be drawn.

There appears, however, to be sufficient evidence to justify a conclusion that the cause of death in the sheep in question was poisoning caused by hydrocyanic acid liberated from the laurel leaves during the process of digestion.

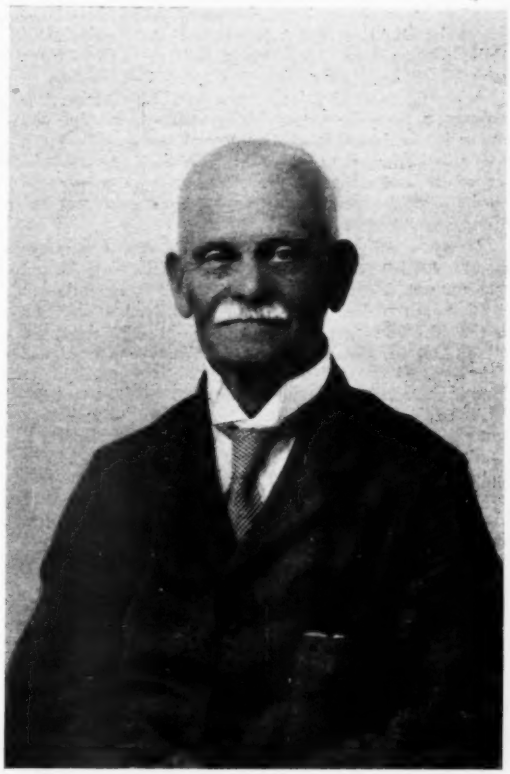
Reference

Henslow, G. (1901.) "Poisonous Plants," London, p. 81.

GEORGE AMOS BANHAM, F.R.C.V.S.

The Origins of the N.V.M.A.

By the death of Mr. G. A. Banham on January 12th last, at the age of 87 years, the profession has lost one of its most respected senior members. As a young graduate he played such a conspicuous part in founding the organisation which has since developed into the present National Veterinary Medical Association that we are now under obligation to pay special tribute to his memory.



Born at Cambridge on March 16th, 1853, he was educated at the Perse Grammar School, and then articled with Mr. Page Wallis, M.R.C.V.S., from 1871, staying on with the latter until he entered the Royal Veterinary College, London, in October, 1874. After a brilliant academic career, he qualified as M.R.C.V.S. on April 5th, 1876, winning the Spooner Gold Medal and the First FitzWygram Prize in a specially good year, the Second Prizeman being Sir John M'Fadyean. He studied afterwards at the Berlin Veterinary School and was then appointed to follow the late Professor Duguid as Veterinary Surgeon to the Brown Institution, one of the very few whole-time posts available to the aspiring veterinary graduate in those days. It was during his tenure of this post that he became an originator of the movement which led to the foundation of the N.V.M.A.

The story of this movement is detailed in the *Proceedings of the British National Veterinary Congress*, 1881, sittings July 20th and 21st. "The project of assembling the

members of the veterinary profession for the discussion of urgent and important professional topics," we are told, "originated with the small body of veterinarians which attended the sittings of the British Medical Association as held in Cambridge during August, 1880. The course of the discussions at the Public Health Section rendered it evident that much information in the possession of the veterinary profession is not as yet accepted by our medical *confrères*. Encouragement also was derived from the fact that on the Continent in various countries gatherings of veterinarians had been recently tried on a large scale, and with marked success. Again, the profession in the United Kingdom had recently become consolidated by the admission of the Highland and Agricultural Society's graduates to the membership of the Royal College of Veterinary Surgeons on such terms that they availed themselves of the opportunity in very large numbers. Lastly, the proceedings at several meetings of veterinary societies had rendered it evident that some opportunity should be given of ventilating subjects of more than local professional importance, and on which the votes of a large number of members of the profession from different parts of the country should be taken.

"It was accordingly resolved to make the attempt to assemble British veterinary practitioners at a Congress, and a scheme was drawn up and submitted to those gentlemen who first approved of the idea. . . ." The task of converting this idea into the action which soon brought about the gathering of a representative Congress of veterinarians was evidently undertaken in the main by the two young Honorary Secretaries who prepared the *Proceedings*, namely, G. A. Banham and J. H. Steel. Steel at the time was Lecturer on and Demonstrator of Anatomy at the Royal Veterinary College, London. He was a year senior to Banham in graduation into the profession, a brilliant and devoted student, who, in 1875, was the first FitzWygram Prizeman, who became a facile writer of text-books, and who soon after the Congress migrated to India, as Principal of the Bombay Veterinary College, there to die at an early age, in 1891. The memory of this "earnest worker" is perpetuated in the highest prize awarded by the R.C.V.S., the John Henry Steel Memorial Prize. It is well to recall the debt which the profession owes for its advancement to the enthusiasm of its youngest members, of whom Banham and Steel are shining examples.

The Originating Committee of the Congress, composed of nine Secretaries fairly allocated for various regions and interests, at home and overseas, met in London at Christmas, 1880, and the subsequent Provisional Committee was formed into four sections covering the areas in which veterinary associations already existed so as to enlist their active support in the movement for a central Congress. The results were highly favourable towards it, and a selection of subjects for discussion was then made, consisting of four major subjects of professional interest and some minor subjects of more or less political interest. It is the record of the discussions on these minor subjects that is at this moment of prime historical interest. The Congress held its highly successful sittings at the Society of Arts lecture theatre, Adelphi, London. Dr. George Fleming, Principal Veterinary Surgeon to the Army and President of the Council, R.C.V.S., was elected to the chair. In the course of the proceedings dealing with a "Minor Subject" on the first day, a motion was passed giving the support of the Congress to the Chairman to what was very largely his individual action in framing and piloting through Parliament the measure which has given legal status to the profession, namely, the Veterinary Surgeons Act, 1881, at that moment, from the Chairman's remarks, experiencing danger of overthrow in the House of Lords, but saved by the strong supporting action of the R.S.P.C.A., the Secretary of which body was also present to indicate the measure of support his society was giving.

"Another 'Minor Subject,' introduced at the close of the second day's proceedings, was a paper by Mr. G. A. Banham, entitled "A Scheme for Forming a British National Veterinary Association." This paper may be looked upon as the original draft scheme for the N.V.M.A. To give exactly the idea he had then in mind in regard to the affiliation of Veterinary Societies, the relevant section is here reproduced :—

"Societies

"In forming such an Association in so small (numerically) a profession as the Veterinary, it is absolutely necessary that the existing Societies should lend their aid, in return for which some advantages ought, if possible, to be allowed to the members of those Societies.

"Therefore we propose that the existing Veterinary Medical Societies should look upon the Association as the grand connecting link between them, and that the General Meeting of the Association should be, as it were, a meeting of all the local Veterinary Medical Societies joined together. If this view be taken and accepted, it would not be difficult for the plan to be carried out, for the collective assistance of the Societies would put the movement on a firm basis.

"Although the Societies should be looked upon as the mainstay of the Association, still there are many members of the profession who do not belong to any local Society, but who would be glad to assist in forming a Central Association. Moreover, there are many who would join for the sake of receiving a copy of the publications, and to assist a movement whose object was purely to advance Veterinary Science."

The scheme which Banham had in mind may therefore be regarded as the embryo of the idea, which in the minds of Bradley, Gofton, and other successors, took definite shape 38 years later, at the 36th General Meeting of the N.V.M.A., held at the identical meeting place, namely, the Royal Society of Arts lecture room, Adelphi, on October 31st, 1919, when the N.V.M.A. was launched in its present form of a federated professional organisation, with all-embracing functions for promoting the welfare of the veterinary profession. At the suggestion of the Chairman, Dr. Fleming, the Congress readily assented to the view that an Association as proposed by Mr. Banham would be advantageous and that a Committee should be formed to consider the subject and plan rules for its guidance. Steel and Banham were instructed to select names for this Committee, for the approval of the entire body.

After the acceptance of Mr. Banham's scheme, the proposal put forward by the late Wm. Hunting (subsequently the founder, in 1888, of *The Veterinary Record*) and carried, reads with interest :—

"'This Congress, consisting of British veterinary practitioners and others interested in the welfare of our domesticated animals, considers such meetings as the present conducive to the public welfare, and advantageous to the veterinary profession, and that it is advisable the British National Veterinary Congress become an established institution.'

"Gentlemen, facts speak louder than words. Our success has been so great that I need add nothing, but simply put the proposition."

With the degree of enthusiasm abroad in the profession at the time, the formation of a central body as envisaged by Banham was therefore, to a very large extent, inevitable.

Following upon the proposal passed at the 1881 Congress, the First General Meeting of the National Veterinary

Association came to be held, again at the Adelphi meeting place, on May 8th, 1883, under the presidency of Dr. Fleming. The Committee, the formation of which was proposed at the Congress, was representative of the existing 13 local Veterinary Medical Societies, the Colleges, and the Army Veterinary Department. Steel having departed for India, the secretarial work was carried out by Banham. At this important Committee Meeting, held at 10, Red Lion Square, London, on October 27th, 1882, it was resolved, on the proposal of Dr. Fleming, "That the objects of the Association should, for the present, be to provide means for holding meetings of the profession for discussing professional topics, and otherwise advancing veterinary science." Thus it came to be that for several years, until the wider development in the functions of the N.V.M.A. already referred to took place, the National Veterinary Association confined its activities to the holding of annual meetings, almost entirely restricted to the discussion of professional subjects. To accomplish Fleming's propositions, Banham suggested "that the existing Veterinary Medical Societies should specially lend their aid, and look upon the Association as a connecting link between them, although the Association claimed no connection with their individual rights and constitutions. If two or more of these societies co-operated from time to time, the ways and means would easily be provided for holding the meetings in different parts of the kingdom, which is one of the chief features of the Association." The number of members of the profession which belonged to the Association at the time of its first General Meeting was 175 only (as compared with the present membership of 2,167). Banham remained Secretary of the Association until the 8th (Special) General Meeting held at Red Lion Square on October 2nd, 1890, when he was succeeded by another pioneer, of different and more stolid temperament, to whose memory the N.V.M.A. lies also under a debt of gratitude, the late Mr. John Malcolm, of Birmingham. The proceedings of this meeting indicate that in spite of the remarkable energy and enthusiasm with which Banham had prosecuted the affairs of the Association, for some time to steady growth, he was showing signs of certain temperamental defects which made him over sensitive to criticism. The Association therefore was giving indication of decreasing vigour, and the only paper presented at the 8th (1890) meeting was one by Banham himself on the evergreen topic of those days, "Soundness and Unsoundness of Horses."

Although some feeling was expressed among members that a new periodical ought to be launched to publish the proceedings of the National Veterinary Association and local Societies, it was evident from the Report of the 1886 (4th) General Meeting that the existing veterinary periodicals, *The Veterinarian* and *The Veterinary Journal* were somewhat hostile to the proposition. At the 1887 (5th) General Meeting, held at Peterborough, a motion was carried unanimously, however, on the proposition of Mr. W. Alston Edgar, "That the time has arrived for the profession to be represented by a WEEKLY Scientific Journal (incorporating or not any existing journal or journals); published under the auspices of the National Association—representing the Veterinary Medical Associations of Great Britain—and supported by a registered staff of contributors." As stated in the Jubilee Number of this journal, the late Wm. Hunting anticipated N.V.M.A. action by starting on his own account *The Veterinary Record* in 1888, which was taken over in 1921 after his decease by the recreated N.V.M.A. for issue as its official organ.

After the termination of his Secretaryship he continued to show interest in the affairs of the N.V.M.A.

Banham graduated as Fellow, R.C.V.S. on July 22nd, 1881, and in the same year took over Mr. S. Sparrow's practice at Cambridge, with the Veterinary Inspectorship of the County under the Board of Agriculture. He built up in Cambridge a very prosperous practice, taking over in addition to his former practice that of Mr. Page Wallis who died in 1893, and with it he became Veterinary Inspector to the Borough of Cambridge. He retired from active work in 1907, the practice passing to the son of Mr. T. Runciman, of Ely, namely, Mr. James G. Runciman, who, with his son, Mr. James P. G. Runciman, is practising there to-day. However, Banham retained the office of Veterinary Inspector under the Board of Agriculture until 1923, when he retired altogether, and went to live near his son, Mr. George Frederick Banham, who is in veterinary practice at Stratford-on-Avon.

During the whole of his active life Banham was keenly interested in the welfare of the profession. He was an Examiner to the R.C.V.S. from 1882 to 1888. In 1902 he became a member of the Council of the R.C.V.S., on which he served for 20 years, being made a Vice-President in 1903, 1908, and again in 1920. An important development in Council procedure originated with Banham, for a noteworthy feature of his activities as a member of that body was his regular presentation, at the October meetings, of a motion that the Registration Committee should be the whole Council. His persistence in this matter until the Council accepted his view and made the requisite by-law, is explained by the following incident. There was a legal action in Cambridge concerning a glandered horse, the veterinary surgeons who gave evidence being the late Mr. Sampson Bennett on one side and Mr. Banham on the other. Mr. Banham considered that there was a miscarriage of justice and reported the case to the Registration Committee. He was not satisfied with the decision of the Registration Committee because only a very few members of Council attended and he felt that a decision affecting the professional status of a member of the College should not be left to the hands of so small a number. Therefore, when he became a member of Council, he was determined that such matters should receive the attention of the *whole* Council. Mr. Banham regularly attended the General Meetings of the College. Reference has already been made in a preceding issue to the popular small veterinary reference book, Banham's *Veterinary Posology*.

Banham belonged to a band of eminently dignified and substantial men who were in control of the affairs of the profession a generation ago. A short man, of slight build, cultured appearance and sensitive mien, he deviated from the type of veterinarian pictured in the popular mind. Whether after his brilliant early promise he would have progressed farther if he had entered the academic side of the profession is hard to tell. A long life full of interest with a long period of repose before its close may, however, be thought commonly to be as well-earned a recompense as a man can ordinarily hope to obtain from any profession to which he has given the benefits of exceptional talents.

It is hoped, nevertheless, that what has here been written has not failed to convey the measure of our indebtedness to the memory of a man whose talents, flowering as they did at a very early stage of his career, were directed towards bringing into being the organisation of which this journal is the mouthpiece. We need pause in deference to that memory to vow that the organisation shall be wielded ever more beneficially for the purposes for which he originally conceived it.

J. T. E.

THE VETERINARY RECORD

February 15th, 1941.

THE RED CROSS AGRICULTURE FUND

THERE can be few appeals calculated to find a more ready response among members of the Veterinary Profession than that, for which we are happy that this issue of the *Record* should be the medium, on behalf of the Red Cross Agriculture Fund. At a time when all other bodies, dependent upon or interested in agriculture, are rallying round the responsible committee, it behoves every individual veterinarian to support the efforts of its own sub-committee.

Many organisations and societies related to agriculture have raised very considerable sums on behalf of the Red Cross Agriculture Fund: collectively these have enabled Mr. R. Haddon, the Vice-Chairman of the Fund Committee, acting on behalf of the Chairman, Sir Charles Howell Thomas, to hand to H.R.H. The Duke of Gloucester a cheque bringing to £250,000 the Committee's total contribution, at the first week in December, to the Red Cross and St. John Fund.

We are aware that in many districts veterinarians have already been actively engaged in furthering the interests of this fund by serving on Agricultural Red Cross Committees, in organising gift sales of livestock and in divers other ways. We feel sure, however, that many will be able to place collecting boxes in their surgeries and/or homes and persuade clients and friends to contribute. Another suggestion is that those who are in the habit of giving lifts to pedestrians might carry a box in their cars which they could bring to the notice of these "free fares."

No praise is too high for the photographic reproductions of British Breeds of Livestock put up in sheets of 60 stamps, and referred to in the leaflet enclosed with this issue of the *Record*. They are beautifully executed and the animals true to type; they will be coveted by all children and should be acquired by every veterinary student. We have no doubt that they will have a ready sale.

This is the first appeal that has been made to the profession, as such, to make an organised contribution to the Red Cross Agriculture Fund, and we confidently commend this charitable object to one and all.

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It was announced on February 3rd by Mr. Nevill Matthews, Chairman of the Finance Committee of the Red Cross Agriculture Fund, that up to the end of December farmers, workers, auctioneers, landowners, merchants and others, had contributed no less a sum than £367,717 5s. 4d. to agriculture's own war-time appeal.

The last declared amount was £250,000, but since early December the county committees have forwarded large sums, the results of auction sales held in the late autumn and winter. Collecting boxes, individual contributions, dances, whist drives, and harvest festivals, have helped to swell the total.

CLINICAL COMMUNICATION

Pneumonia in a Hunter with one Lung

E. CONN, M.R.C.V.S.
Coleraine

Subject.—A seven-year-old hunter (gelding).

History.—This animal had enjoyed good health all its life, but the owner noticed it very easily tired when hunting. One morning, after a spell of bad weather, it was found to be very ill.

Examination.—The horse appeared dull and periodically nodded its head. There was some catarrhal discharge from the nostrils which were swollen. The eyes were dull and sunken and the mucous membranes intensely injected. Respirations were fast and noisy, the abdominal movement being exaggerated. The temperature was 98·6 and the pulse fast and weak. Auscultation of the left side of the thorax revealed an increase in bronchial sounds with certain areas of dullness. No sounds whatever could be heard on the right side. Percussion was of little aid to diagnosis.

Diagnosis.—Pneumonia was tentatively suggested.

Prognosis.—This was very serious, the owner being informed that the case was likely to end fatally.

Treatment.—The animal was put into an airy loose box and well rugged up. A brisk mustard counter-irritant was applied to both sides of the chest and sulphanilamide administered, 2 ozs. being given to start with and then 1 oz. twice daily; 1 gr. of strychnine was given hypodermically. Laxative mashes were ordered to be given four times a day. This treatment was carried out for two days but with little result, and the horse died on the third day.

Post-mortem Examination.—The abdominal viscera were quite normal. Exploration of the thorax revealed a very much dilated heart, but the main feature was the entire absence of the right lung. The left lung showed marked pneumonic changes. The trachea was normal until it entered the chest, where it was found to have but one main bronchus, one side being completely blind. The absence of the right lung thus explained the absence of sound on that side and seems an interesting phenomenon.

SLAUGHTER POLICY ENDORSED BY SOUTH DEVON BREEDERS

The wisdom of the slaughter policy for foot-and-mouth disease was, says the *Farmers' Weekly*, upheld by speakers at the annual meeting of the South Devon Herd Book Society, arising out of a statement that, years ago, animals had been cured by treatment.

Mr. J. Wakeham, South Brent, remembered his grandfather's herd being treated. He did not think they lost a bullock, but the condition of the animals was terrible. He could not support a proposal that slaughtering should be discontinued. It took a long time to effect any cure and the expense was tremendous.

Mr. J. Penna thought they should think of their neighbours, especially when they received reasonable compensation and were assisting the Ministry in stamping out the disease.

Mr. F. U. Crook, President, thought perhaps the Ministry could hold their hands in the case of animals on the same farm, but right away from infected animals, until they showed signs of the disease.

Mr. Crook proposed, and Miss Smith seconded a resolution being sent to the Ministry on those lines, but also pointing out that they did not disagree with the principle of slaughtering animals.

The resolution was defeated.

ABSTRACTS

[FAILURE OF DIETARY MAGNESIUM IMBALANCE TO PRODUCE URINARY CALCULI IN WETHERS. Johnson, D. W., Palmer, L. S., and Nelson, J. W. (1940.) *Vet. Med.* No. 6. 352-357.]

In a flock of 2,600 wethers about 10 per cent. were affected with urinary calculi during the winter period. Analysis of the rations fed suggested a magnesium intake greater than normal, and a stone from one of the wethers consisted of $MgNH_4PO_4$. Twenty wethers were purchased and half were fed $MgCO_3$ at a level equal to the previous Mg intake and half received this amount of $MgCO_3$ plus limestone to give a Ca : Mg ratio of 3 : 4. Blood samples were taken before the synthetic rations were fed, after two months and finally after five months, two or three days' samples from each wether being composited and the plasma analysed for Ca, inorganic P and Mg. The urines were periodically examined for crystal formation and the *p*H determined. None of the animals developed calculi and at slaughter only one stone was found in the urinary tracts of the wethers. A steady rise in the plasma Mg was recorded, the startling average figures of 9·0 and 7·4 in the two respective groups being reported, but in spite of this no calculi were produced. Thus the original condition postulated as being due to a relatively high Mg intake could not be experimentally reproduced.

[The chemical evidence presented in this paper is suspect. In the first place the Mg content of the diet was by no means classifiable as high. The blood analyses are far from convincing. The compositing of two or three days' plasma samples without any precautions taken against enzyme action renders the inorganic P figures valueless. The tremendous rise in plasma Mg consequent upon feeding $MgCO_3$ appears *prima facie* most unphysiological from a knowledge of the behaviour of the Mg ion in the body and is opposed to all previously published reliable data on this question. As to whether feeding $MgCO_3$ at any levels which sheep will voluntarily consume would have such pronounced effects upon the plasma Mg level, must certainly await reliable confirmation.]

A. E.

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[I.—THE CORRECTION OF STERILITY IN SOWS WITH A WHEAT GERM OIL PREPARATION; II.—SUCCESSFUL TREATMENT OF *BRUCELLA* INFECTION IN THE PIG BY INJECTION OF WHEAT GERM OIL; III.—FURTHER RESULTS IN EFFECT OF WHEAT GERM OIL ON *BRUCELLA ABORTUS* INFECTION IN SWINE. Lentz, R. W. *Berl. Münch. tierärtzl. Wschr.* (1938.) No. 14, 201-202; *ibid.* (1939.) No. 8, 120-121; *ibid.* (1939.) No. 34, 533-534.]

I.—The literature of vitamin E therapy in veterinary practice is briefly reviewed. During the winter of 1936-37, 20 sterile sows were treated by giving two intramuscular injections of 15 c.c. of a wheat germ oil preparation named "Enoulan." Ten sows subsequently gave birth to live litters, the total number of piglets being 77. Of the ten sows which failed to respond to the wheat germ oil therapy, one was found to have an ovarian cyst, one a metritis, one an intestinal tuberculosis, and one swine erysipelas. Some of the unsuccessfully treated animals gave positive agglutination tests for *Br. abortus*.

II.—A group of 15 sows, nine of which were found to give positive agglutination titres for *Br. abortus*, was treated with the wheat germ oil preparation "Enoulan." In most cases, four or five injections, each of 15 or 25 c.c., were given, the first at the time of mating or early in pregnancy. The six abortus-free sows remained uninfected, and all gave birth to normal litters.

A control group numbering 14 sows, of which eight were initially infected with *Br. abortus*, was given injections of physiological saline. All animals eventually gave positive agglutination tests, and only five gave birth to viable litters.

III.—Of 18 sows which were infected with *Br. abortus*, ten farrowed normally after receiving injections of "Enoulan." Only two of eight controls, which were injected with saline, gave birth to living young.

A. N. W.

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[ABSORPTION OF GLUCOSE FROM THE STOMACH OF THE DOG. Morrison, J. L., Shay, H., Raudin, I. S., Cahoon, R. (1939.) *Proc. Soc. Exp. med. Biol.* **41**. 131-134. (1 table, 17 refs.).]

Conflicting results regarding the absorption of glucose from the stomach of the dog have been reported by a number of workers. Recently it has been claimed that no absorption of glucose occurs in the dog's stomach (Maddock, Trimble, Carey—*J. Biol. Chem.* **103**. 285). Experiments were initiated to investigate those claims. Dogs were fasted for 24 hours. The sugar content of a blood sample was then determined. The animals were anaesthetised by intraperitoneal injection of 50 mg. of sodium amytal per kilo. of body weight. Blood samples were removed 30 and 60 minutes later. Laparotomy was then performed and the pylorus clamped. Through an incision in the oesophagus the stomach tube was passed and 200 to 300 c.c. of 5·9 to 47·1 per cent. glucose solution was injected directly into the stomach. Blood samples were taken every 15 minutes thereafter for one hour. At the completion of each experiment the stomach and oesophagus were excised and carefully washed. The sugar remaining in the washings was estimated. In seven dogs the concentration of glucose administered varied from 40·4 to 47·1 per cent. In these animals a loss of sugar varying from 7·1 to 23·4 g. was detected in every case. In two dogs 15 per cent. glucose was administered. In each of these a small amount of sugar was absorbed. In three dogs approximately isotonic solutions were used. In these there was practically no absorption. In general the peripheral venous blood showed a rise in the blood sugar level whenever glucose was absorbed. It is concluded that glucose is absorbed from the stomach when present in high concentrations. The rate of absorption appears to be related to the concentration of the solution.

D. D. O.

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[IMPROVED SURGICAL TECHNIQUE IN SMALL-ANIMAL PRACTICE. Zepp, C. P. (1940.) *N. Amer. Vet.* **21**. 152-160.]

In the course of an article of general interest several novel suggestions are made.

For anaesthesia the author prefers a subcutaneous injection of morphine and atropine followed in about one hour by slow intravenous administration of

nembutal. The morphine greatly reduces the amount of nembutal required. For Caesarian sections and for operations on young or very old animals, however, ether is the drug of choice. In cases of respiratory arrest during nembutal anaesthesia, metrazol has given good results. Doses of 0·5 c.c. to 1 c.c. can be administered repeatedly at intervals of 2 to 3 minutes.

Ingested foreign bodies are often difficult to diagnose and treat. To visualise non-opaque bodies in the oesophagus strips of cotton-wool soaked in barium are administered. These are caught up by the foreign body and show clearly on X-ray or on the fluorescent screen. In the stomach bismuth tablets fulfil a similar function. Tacks, pieces of rubber, and other small foreign bodies in these regions can be removed with ordinary obstetrical forceps while the subject is under general anaesthesia. The operation is performed with the aid of the fluoroscope.

After operation, to stimulate healing in flabby skin, a piece of ordinary marine sponge soaked in cod liver oil should be bandaged on to the wound. In ulcerated conditions of the mouth, 5 per cent. silver nitrate is used. In chronic external ulceration 15 per cent. silver nitrate, followed by a paste of honey and cod liver oil, gives excellent results.

In the treatment of burns a spray of tincture of boric chloride is advocated. Equally satisfactory results, however, follow the use of tannic acid.

D. D. O.

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[THE HAEMATOLOGY OF AVITAMINOSIS A IN DOGS AND RABBITS. Emmel, M. W. (1940.) *J. Amer. vet. med. Ass.* **97**. 145.]

Emmel has studied the blood picture in two groups of three puppies each, all litter mates. The first group was fed on a vitamin A deficient diet, and the second group received a diet low in vitamin A content. There were two control pups, litter mates to the above.

The first group developed acute symptoms of vitamin A deficiency—anorexia, nervous symptoms, partial blindness and conjunctivitis. The normal numerical relationship between large and small lymphocytes was reversed. The second group showed slight symptoms of avitaminosis A, and failed to gain weight as rapidly as the controls. Their blood picture showed an increase in the total lymphocyte count with a predominance of large lymphocytes.

On the administration of adequate amounts of vitamin A to both groups, the symptoms disappeared and the differential leucocyte count returned to normal.

Similar blood pictures were observed in rabbit does and young rabbits suffering from what the author considered to be a chronic vitamin A deficiency. The red cell counts were not appreciably affected in either species.

D. L. H.

It was stated in the report of Mr. J. A. Flynn, Chief Veterinary Officer, at a meeting of the Dublin County Board of Health, that owing to the shortage of petrol the number of inspections carried out by veterinary officers had declined. The report added that it was doubtful if the veterinary staff would be able to complete two winter inspections of dairy cattle as petrol supplies had to be conserved for their private practice and urgent official duties.

REVIEW

[VETERINARY HYGIENE. (1940.) (Third Edition.) By R. G. Linton. Published by Messrs. W. Green & Son, Edinburgh. Roy. 8vo. 25s. pp. 487.]

It seems a pity that by use and wont it has become customary to devote only a comparatively small space to reviews of second and subsequent editions of text-books. It very frequently happens that as a book progresses through various editions it becomes much improved, more comprehensive and more accurate. This, we feel, fully applies to the third edition of what in the Veterinary Colleges is now familarly known as " Linton's Hygiene."

The author observes in his preface that the establishment of the Animal Health Division of the Ministry of Agriculture and Fisheries has brought about administrative changes in the Diseases of Animals Acts and Orders made under them, and opportunity has been taken to revise and enlarge the particular section of the book which deals with the Control of Notifiable Diseases. This is probably the part which has changed most.

The general arrangement of the book is similar to that of earlier editions, the main sections being those on Water, Sanitation, Air and Ventilation, Building Construction, and Control of Disease. There is, as most of our readers are fully aware, a great difficulty in presenting all the information on these subjects within the compass of one volume. There must almost inevitably be some omissions, but we think they are few. We might, however, suggest for consideration that in a future edition there be included some account of the construction of cheap wooden, or brick-based wooden, loose-boxes suitable for use as quarantine or calving boxes. More adequate loose-box accommodation for isolating and treating cases of disease, as well as for other purposes, is probably the greatest building need on most commercial farms in Britain at the present day. Elaborate costly boxes, although admirable, are beyond the financial resources of many farmers, and for the price of one of these it is often possible to build three or even four more simple loose-boxes with concrete floors, a 2 ft. 6 in. brick wall, and wooden frame with weather boarding, topped with a simple roof. These, if well constructed, are satisfactory for innumerable purposes on every type of farm. To increase their numbers would make the veterinarian's task of controlling disease much easier.

Another subject for future consideration might be a description of the trough-conduit system of byre ventilation, which is functioning well where it has been installed. It has the advantage of bringing fresh air direct to the cows' heads where a double-radius food trough and feeding passage are used.

These remarks should not be regarded as criticisms. The book deserves the widest recognition, for we know of none other which contains such extensive information on veterinary hygiene. It can be thoroughly recommended both to the practitioner and the student : to the latter it is, indeed, indispensable.

The famous Egerton House private gallop on the Heath Farm field at Newmarket has been ploughed up. The gallop was laid down in 1885 by Matthew Dawson, and there Minting had preliminary gallops before his classic engagements.

IN PARLIAMENT

Sterility and Disease in Dairy Stock

It is clear that members of Parliament are taking an interest in the Report of the N.V.M.A. Survey Committee. Question-time in the House of Commons on Tuesday of last week evoked from the Minister of Agriculture an assurance that all interested parties, including representatives of the veterinary profession, were being consulted by his department in the matter of the wider adoption of the most suitable methods of effecting a reduction of the losses caused by sterility and diseases of dairy stock, to the urgency of which measures attention had been drawn by the disclosures made in the report on some diseases of cattle recently issued by the Survey Committee on behalf of the National Veterinary Medical Association.

Following is the *Hansard* report of these proceedings :—

Colonel Carver asked the Minister of Agriculture whether, in view of the losses to the dairy industry of this country through sterility in dairy cattle, he will take early steps to ensure that stock-owners keep accurate herd records, and that veterinary practitioners to whom such records should be available should carry out regular periodic examinations of all breeding animals in the herds for the purpose of applying the necessary treatment?

Mr. Hudson: Consultations are taking place with all interested parties, including representatives of the veterinary profession, with the object of securing the wider adoption of the most suitable methods of effecting a reduction of the losses caused by sterility and diseases of dairy stock.

Mr. Wootton-Davies asked the Minister of Agriculture whether he is aware of the investigations of the National Veterinary Medical Association which have recently shown that there is a loss to the nation per year from the presence of mastitis, contagious abortion and sterility in dairy cattle of over 83,000 tons of solid protein, sugar and minerals, and a loss of over 31,000 tons of butter fat, and whether, in view of the urgent national importance of increasing home produced food supplies, he will apply remedial measures in this field at the earliest opportunity?

Mr. Hudson: I am aware of the calculations made by the National Veterinary Medical Association as to the economic losses caused by mastitis, contagious abortion and sterility in dairy cattle. As regards the latter part of the Question I would refer my hon. Friend to the reply given to-day to my hon. and gallant Friend the Member for Howdenshire (Colonel Carver).

At a later date Lieut.-Colonel Sir Thomas Moore asked the Minister of Agriculture whether, in view of the present losses caused by the various diseases of dairy cattle in this country, he will arrange for a regular routine examination of all dairy cows in order to facilitate the early detection of mastitis and to allow the earliest possible introduction of measures for its treatment and control?

Mr. Hudson: As indicated in the reply given on February 4th to my hon. and gallant Friend the Member for Howdenshire (Colonel Carver), consultations are taking place with a view to the adoption of the most suitable methods of controlling diseases of dairy stock, including mastitis.

The Veterinary Profession

Colonel Carver asked the Minister of Agriculture whether, in view of the fact that at the outbreak of war the veterinary profession was placed in the schedule of reserved occupations, he will take steps to ensure that this profession shall play a more important part in the interests of the nation by applying its science and art in greater measure to the preservation of health in livestock, with the particular object of ensuring the maximum production in this country of milk and meat?

Mr. Hudson: I would refer my hon. and gallant Friend to the reply given to him on February 4th on the subject of the wider adoption of methods of effecting a reduction of the losses caused by sterility and diseases of dairy stock.

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The following are among other questions and answers recently recorded in the House of Commons:—

Milk

Mr. David Adams asked the Minister of Agriculture whether he is aware that 372 samples of graded milk sold in Newcastle-upon-Tyne during 1940 showed a percentage of 92·4 as satisfactory, and during the same period 726 samples of undesignated milk and 46 samples of accommodation milk showed only 69·56 and 56·52, respectively, satisfactory, and, as these last named qualities due to excrement and pathogenic organisms are dangerous to the public health, are steps being taken by improved supervision of the farms concerned and adequate veterinary inspection to remedy this situation?

Mr. Hudson: A statement of the results of the examination of the milk referred to has been received by my right hon. Friend, the Minister of Health. The supervision of the cleanliness of dairy farms is a matter for the local authority as regards both designated and undesignated milk. The veterinary inspection of dairy cows by my officers is being continued as in peace-time, and in this connection I would add that so far as tuberculosis is concerned the number of positive milk samples reported from Newcastle-upon-Tyne in 1940 was very small.

Mr. Adams: Is the Minister aware that there are many farms in the country which have been grossly neglected by their owners and where there have been no veterinary inspections for months? Will he take action?

Mr. Hudson: The hon. Member's Question affects Newcastle-upon-Tyne and I have given him an answer.

Mr. Adams: But that is where the milk goes to for consumption.

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Infected Farms (Official Visits)

Mrs. Tate asked the Minister of Agriculture whether he is aware that farms free from foot-and-mouth disease have been visited by Ministry officials who have previously visited infected farms; and whether he will prohibit this practice in view of the danger of their spreading the disease?

Mr. R. S. Hudson: Every possible step is taken to ensure that the Ministry's officials do not, until they have thoroughly disinfected their hands, clothing and boots, visit premises which are free from foot-and-mouth disease after they have been on farms where the disease exists. It may, of course, occasionally happen that owing to the impossibility of recognising the disease in its very early stages inspectors may visit premises where infection exists and not be aware of the fact.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Feb. 18th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, 1, Wimpole Street, W.1, 2.15 p.m.

Feb. 20th.—Lincolnshire and District Division, N.V.M.A.: Demonstration at Culverthorpe Dairy Farm, Denton, Grantham, 2 p.m. To be followed by the Annual General Meeting of the Division at the George Hotel, Grantham.

Feb. 22nd.—Meeting of the Scottish Branch, N.V.M.A., at Edinburgh, 11.30 a.m.

Feb. 26th.—Annual General Meeting of the Lancashire Division, N.V.M.A., at Liverpool, 2.15 p.m.

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PERSONAL

Birth.—At White House, London Road, King's Lynn, on January 27th, to Edna, wife of Harold C. Swann, M.R.C.V.S.—a daughter.

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Miraculous Escape of Mr. E. C. Bovett, M.R.C.V.S.

Among the many members of the profession who have experienced misfortune through enemy action, possibly Mr. E. C. Bovett, of Bristol, has had the most miraculous escape.

On January 4th, at 2 o'clock in the morning, his premises at No. 13, Berkeley Square received a direct hit from a 1,000 lb. bomb. His premises were so razed to the ground that rescue and demolition squads were satisfied that no one could possibly have survived, and in consequence they devoted their attentions to the Y.W.C.A. Hostel next door, where 20 women and girls had been trapped.

About 10.30 a.m., Mr. D. W. Menzies, the Veterinary Investigation Officer for the district, who also has his office in Berkeley Square, went over to see what had happened at Mr. Bovett's premises. He was there joined by Inspector Horner, R.S.P.C.A., and as there was no one working on the ruins, they decided to find out for themselves if any life still existed, and happily, at 10.30 to 11 o'clock, they heard tapping. They promptly summoned the rescue party, and after working for 5 or 6 hours, succeeded in getting Mr. Bovett out at 4 p.m. It was fortunate that Inspector Horner knew the plan of the building, for it was on his suggestion that a hole was made through the wall of the adjacent building, No. 12, through which Mr. Bovett was extricated.

Both Mr. Menzies, Inspector Horner and the rescue party worked at great danger to themselves, as the wall of No. 12, a five-storey building, was so badly shaken as to be 6 in. out of the true at the top, and might easily have crashed down upon them at any time.

Readers will be ready to congratulate Mr. Bovett on his astonishing escape and also gratefully to extend very warmest thanks to Mr. Menzies, Inspector Horner and the other workers for the excellent and praiseworthy services which they rendered.

At the same time, we would express our sympathy to Mr. Bovett in the loss he has sustained by the death of his Secretary, Mrs. Jones, and his Head Kennelman, a promising youth of 25 years.

The catastrophe led to the loss of 25 dogs and cats who were, at the time, patients on the premises.

We are glad to be able to report that Mr. Bovett, who was removed to hospital suffering from shock and injuries, has now practically recovered.

R.C.V.S. OBITUARY

Sir John M'Fadyean

In the two succeeding issues of this journal will be published a full account of the life and work of Sir John M'Fadyean, whose death it was our sad duty to record last week. Insertion will also be made of personal and other tributes.

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Downe, Horace Frank, 5, Victoria Road, Diss, Norfolk. Graduated May 29th, 1894. Died February 2nd, 1941.

Foster, Arthur Norman, O.B.E., F.R.C.V.S., 8, Monk's Road, Lincoln. Major R.A.V.C. (T.A. Res.) (retd.). Graduated London, July 14th, 1903; Fellow May 15th, 1909. Died February 1st, 1941.

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GENERAL OBITUARY

Professor G. H. Gemmell

Former students of the Royal (Dick) Veterinary College will learn with regret of the death of Professor G. H. Gemmell, which took place, at the age of 80, on Saturday, February 1st.

Professor Gemmell was appointed to the Chair of Chemistry at the Royal (Dick) Veterinary College in 1907; he retired in 1925. A link with his teaching days was established by him in the presentation of the Gemmell Prize in Chemistry and Biochemistry.

In addition to his activities in teaching, Professor Gemmell was Public Analyst for a number of local authorities in Scotland.

Coming in contact with students in their earliest days at College, Professor Gemmell played an important role in developing in the young undergraduate a spirit of corporate discipline. His influence in this respect was invaluable to his colleagues on the College staff.

He was regarded with great affection by his students, who appreciated the wide knowledge of his subject that he possessed, and enjoyed the pawky humour with which he enlivened his lectures.

Professor Gemmell is survived by his wife. His son died from the effects of war-gas poisoning in 1919 and his daughter died some years ago.

The funeral, which took place at the Grange Cemetery on Tuesday, February 4th, was attended by Professor Thin, his partner and successor in the Chair of Chemistry in the College, Professor Linton, Dr. J. Russell Greig and Professor Boddie.

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THE PARLIAMENTARY AND SCIENTIFIC COMMITTEE

At the Annual General Meeting of the Parliamentary and Scientific Committee held at the House of Commons on Tuesday, January 28th, the following Officers were elected for 1941:—

President: The Rt. Hon. The Earl of Dudley, M.C.
Vice-Presidents: The Rt. Hon. Viscount Samuel, G.C.B., G.B.E.
Professor A. V. Hill, M.P.
Captain S. F. Markham, M.A., M.P.
Vice-Chairman: Professor B. W. Holman, O.B.E., A.R.S.M.
Deputy Chairman: E. W. Salt, Esq., M.P.
Hon. Treasurer: R. B. Pilcher, Esq., O.B.E.
Hon. Secretary: Dr. W. R. Wooldridge, M.Sc., M.R.C.V.S.

Professor A. V. Hill, M.P., addressed the Committee on "Science, national and international, and the basis of co-operation." In the discussion which followed it was agreed to print and circulate Professor Hill's statement as widely as possible, Dr. Wooldridge commenting that Professor Hill had put forward several points of considerable importance with which members of the Committee had for long been in agreement.

[It is hoped to publish Professor Hill's address in an early issue of the *Record.—Editor.*]

It was agreed that the Secretary should communicate with all the constituent bodies and ask them to put forward proposals for activity by the Committee for 1941.

At the suggestion of Professor Holman it was agreed that the Committee should do what it could to support the campaign for the internationalisation of scientific terms.

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MINISTRY OF AGRICULTURE NEWS SERVICE

Money Saved in the Cowshed: Precautions Against Mastitis Pay Dividends.—Mastitis, a disease of the udder, is more important than is generally recognised. In fact it is only in recent years that any intelligent attempt to deal with it has been made. It entails loss to the dairy farmer by reduced milk yield, loss of value in the animals and wastage in the herd. In some forms of the disease the germs produce a strong poison that gets into the blood stream and sets up wasting conditions. Sometimes animals thus affected recover, but they are never the same again.

Sometimes mastitis can be detected by careful observation. If the milk yield goes down, the disease should be suspected. But the only satisfactory method of identifying mastitis is by analysis in a laboratory of samples of milk from each quarter of the udder.

The only way to eradicate mastitis from an affected herd is to get rid of the infected animals. But much can be done to prevent the disease spreading. Infected animals should be segregated, if possible in a separate milking shed. On no account must they be allowed to contact healthy animals. The unaffected cows should always be watered, groomed and milked first. It is a good plan to begin milking the youngest animals and work upwards to the oldest.

When milking machines are used, a separate set of teat cups should be used for affected animals, or they might be milked by hand and not put on the machine at all. If the same teat cups must be used they should be sterilised by steam between each milking.

The Battle of Food: Returns are Needed to enable Ministry to Allocate Feeding-stuffs.—Many hard things have been said about statistics, especially by farmers struggling to complete yet more forms. But there are times when such evils are necessary and have their use. The December 4th returns of livestock and other particulars of farms were not called for merely to satisfy someone's morbid love of arithmetic. The object is to procure information of great importance.

It is essential that the Government should know, at this stage in the Battle of Food, exactly how we stand in this respect. The annual June 4th return is insufficient. Any community whose food supply is threatened must take more frequent stock of its resources than once a year.

But there is a second reason, of particular importance to farmers, for this December 4th census. The feeding-stuffs rationing scheme came into force on February 1st, and farmers who failed to make the returns for which they are asked endangered their prospects of receiving coupons to enable them to buy feeding stuffs.

Bonus on Cattle Prices: Earlier Slaughter to Increase Home Meat Supplies.—The Government wish farmers to bring their cattle forward for slaughter at an earlier stage than they had planned under their winter feeding programme. The object is to provide greater supplies of meat from home sources during the next few weeks. An adjustment of the prices to be paid for certain grades of fat cattle will accordingly be made for a limited period. Until March 8th a bonus of 2s. per live cwt. will be paid over the prices previously published for steers, heifers and cow-heifers estimated to kill out at 53 to 55 per cent. of their live weight, *i.e.*, cattle of the B grades. A bonus of 1s. per live cwt. will be paid for fat steers, heifers and cow-heifers estimated to kill out at 56 per cent., *i.e.*, cattle of the A Minus grade. Animals may be presented for sale to the Ministry of Food of Collecting Centres, only if they have been duly entered for sale on form M.A.T. with the District Chairman of Auctioneers twelve days prior to the week in which the animals are to be offered for sale.

Pig Clubs and the Future: Wartime Movement Will Have its Part to Play in Peace.—Pig clubs make steady progress under the wing of the Small Pig Keepers' Council: the number is approaching the 400 mark. Their value to the nation in wartime is fairly obvious. They produce pig meat from household and garden waste that would otherwise contribute nothing to our food supplies, and only require a small quantity of supplementary meal to balance the ration. Small pig keepers who join a club save money by the bulk purchase of meal by the club for its members.

But it would be sad if the pig club movement were to end with the war, for it could fulfil a useful function in the general life of the countryside. The village club accustoms the rural family to the care and handling of livestock from youth upwards and some of our agricultural show societies can trace their ancestry back to a humble village pig club. In return for not such a very large amount of time and care, the cottager's pig can make quite a useful contribution to the cottage budget, even if it is not consumed on the premises but sold to a butcher and thus converted into terms of overcoats or shoes for a growing family.

It is to be hoped, too, that the more urban clubs, where pigs are often kept and fed co-operatively, will not disappear. They help to bridge the gap between town and country and to bring home the realities of food production to a population that was becoming all too inclined to think that food grows in tins, bottles and paper bags. From its office at Turvill Heath, Henley-on-Thames, the Small Pig Keepers' Council is not only stimulating the formation of pig clubs but is also doing a great deal of conventional work in the interests of small pig keepers generally.

Preventing Swayback

Copper Licks Solve "Mystery" Disease Problem.—Until quite recently, "swayback" was one of those "mystery" diseases that struck down lambs, particularly in certain districts, in a manner that was the more alarming because its cause could not be diagnosed. But it has lately been discovered that swayback, where prevalent, can be robbed of most of its terrors if the ewes, during pregnancy, are supplied with a supplement of copper. The most convenient way of using this method of prevention is to allow the ewes access to salt licks, containing 0·3 per cent. of copper sulphate if supplied throughout their period of pregnancy, or 1·0 per cent. if only given during the final few weeks before lambing. Full details are given in a new leaflet the Ministry has produced on the subject.

Sheep take some time to become accustomed to lick feeding, however, and so stock-owners who are using licks for the first time should begin feeding the 0·3 per cent. as near the beginning of pregnancy as possible instead of relying upon the more intensive method of using 1·0 per cent. copper licks a few weeks before the lambs are due.

Help for Hill Sheep Farmers

New Subsidy of 2s. 6d. per Head to Tide Over Till Next Autumn.—The hill sheep industry has had ten bad years, except for 1937. With the present need to plough more grassland, many are facing further difficulties on account of the disappearance of some of the lowland pastures they normally use in winter. The Government has, therefore, decided to give a special subsidy of 2s. 6d. per head for each breeding ewe in hill flocks, including shearling ewes or gimmers. It is designed to cover all regular breeding ewe stocks of hill sheep kept under natural conditions on hill land and managed in accordance with the recognised practices of hill sheep farming. The scheme is designed to tide the hill sheep farming industry over the period until further returns accrue next autumn. It will cost, at a rough estimate, £700,000 and rather more than half this money will go to Scotland.

ECONOMY IN THE USE OF DRUGS DURING THE WAR

Medical Research Council's Provisional Memorandum on Drugs for Veterinary Purposes

The National Veterinary Medical Association recently received from the Medical Research Council a communication in the course of which the following observations were made in reference to a provisional memorandum on drugs for veterinary use which has been drawn up by the Council's Therapeutics Requirements Committee with the assistance of Professor G. H. Wooldridge:—

"The Therapeutic Requirements Committee of the Medical Research Council recently prepared a memorandum on economy in the use of drugs during the war. This was not published as an official document, but it was circulated to Government Departments and various medical and trade bodies; extensive quotations from it also appeared in scientific journals. The memorandum is now being revised by the Committee in the light of criticisms which have been received and with a view to the addition of certain categories of drugs not included in the first instance. This revised version, when ready, will be published.

"The original memorandum dealt only with medical uses, but it is desired that the published edition should cover also the veterinary uses of the same drugs and such few additional drugs as are used solely for veterinary purposes. A veterinary supplement to the original memorandum has accordingly been prepared with the assistance of Professor G. H. Wooldridge, who had been added to the Committee after consultation with the Chief Veterinary Officer of the Ministry of Agriculture and Fisheries."

Copies of this provisional memorandum on drugs for veterinary uses were forwarded with the foregoing letter which proceeded to invite the observations of the N.V.M.A. thereupon, and authorised the publication of reference to this matter in the Association's journal. The information contained in the provisional memorandum is published at the end of this note.

In accordance with the invitation extended to the Association, the following communication (dated January 21st, 1941) was addressed to the Secretary of the Medical Research Council:—

"The National Veterinary Medical Association wishes to submit the following comments on the provisional memorandum on drugs for veterinary use which has been drawn up by the Therapeutic Requirements Committee of the Medical Research Council and a copy of which was enclosed with your letter of December 6th, reference 3050/5. These comments have been prepared after consultation with various members of the Association, including G. F. Boddie, B.Sc., M.R.C.V.S., Professor of Medicine and Pharmacology, Royal (Dick) Veterinary College, and W. J. Ironside, M.R.C.V.S., M.P.S., Lecturer in Veterinary Science, Midland Agricultural College, Sutton Bonington, Loughborough.

"While the memorandum in its present form is no doubt useful to many members of the veterinary profession, it does not present in a readily available form the information that would be most useful to the average veterinary practitioner. The Association believes that a considerable economy in drugs could result if veterinary practitioners were supplied with a list indicating those drugs which are freely available, and the use of which would not interfere with the war effort. This list might contain a supplement indicating drugs which, though not plentiful, might be used with justification when absolutely essential. It could be stated in the preamble to these lists that any drug not included should, if possible, not be purchased during the present emergency.

"In regard to the list submitted, it appears that the following drugs could quite well be omitted from the list: Acid Ascorbic, Alcohol, Amylum, Betanaphthol, Bromethol, Buchu, Capsicum, Colchicum, Colophonium, Ext. Hepatis Liq., Inj. Hepatis Iodoxylum, Lactose, Ol. Caryoph, Pancreatin, Thyroideum, Urea. The following might well be included in the list: Acacia, Acid Picric, Adeps, Cascara, Glucose and Santonin.

The following are comments regarding individual drugs in view of the inclusion of them in the lists:—

Bismuth Salts are really only used extensively in small-animal practice and could largely be replaced by one of the substitutes named.

Caffeine need only be available for veterinary practice in the form of a soluble salt for hypodermic injection.

Cantharis.—Sinapis cannot be regarded as an effective substitute for a cantharides blister.

Biniodide of Mercury.—This drug might be used more economically than in the past.

Jalap.—While this drug is useful there are other equally effective purges for the pig.

Linum and Linseed Oil.—There does not seem to be any justification for reserving linseed for veterinary practice. Its proper use is as a foodstuff for animals. The statement that linseed oil should be reserved for external use is incomprehensible. It may be that it is a mistake for *internal* use. As linseed oil can be effectively substituted by liquid paraffin, there is no need to reserve linseed oil for internal use in veterinary practice.

Oil of Chenopodium.—In view of the introduction of phenothiazine for horses, the need for oil of chenopodium, except perhaps for pigs, has largely disappeared.

Rape Oil.—There is no justification for the reservation of rape oil for external use in veterinary practice. There are many better substitutes.

Liquid Paraffin will require to be available in considerable quantities, but economy in its use might well be encouraged.

Pilocarpine Nitrate.—Provided one of the other hypodermic purges is available there can be no objection that pilocarpine remain in Category B.

Suprarenal Cortex Extract.—There seems to be no need for including this substance when Adrenalin is already in Category A.

"The Association trusts that these comments will be of assistance to the Therapeutic Requirements Committee and will be pleased to be of any further assistance in dealing with the preparation of this list of drugs."

. . . . .

Medical Research Council: Therapeutic Requirements Committee

List of Drugs for Veterinary Use as revised at the Meeting on November 5th, 1940

Many drugs not included in this list are in common use and would have been Class C, but can either be dispensed with or easily replaced by others on the list.

The drugs in the list are classified as follows:—

A. Drugs which are either (1) readily available at present or (2) regarded as essential.

B. Drugs which are essential for certain purposes but the use of which should be restricted.

C. Drugs which are not essential and do not justify importation or manufacture in war-time.

Those marked * are specially called for under Acts and Orders of the Ministry of Agriculture and adequate supplies should be assured.

Acaprin
Pirevan is identical.
Acid acetic (A).
Acid acetylsalicylic (A).
Acid ascorbic (A).
Acid boric (B)
Boric acid in boric lint is wasted.
Acid hydrochloric (A).
Acid hydrocyanic (A).
Acid mandelic (A).
Acid nitric (A).
Acid oleic (A).
Acid phosphoric (A).
Acid salicylic (A).
Acid sulphuric (A).
Acid tannic (A).
Acriflavin (A).
Adrenalin (A).
Aether (A).
Alcohol (B)
Many tinctures can be replaced by concentrated preparations.
Aloe (A).
Aloin (A).
Alum (A).
Ammon. carb. (A).
Ammon. chlor. (A)
Amyl nitris (A).
Amylum (B)
Under Government control.
Antimony compounds (A).
Areca (A).
Arecolin hydrobrom. (A).
Argent nit. (A).
Argentproteinum (A).
Apomorphin hydrochlor. (A).
Arsen. trioxid. (A•).
Atropin (and salts) (A).
Belladon. fol. (A).
Belladon. rad. (A).
Betanaphthol (A).
Bismuth salts (B)
Substitutes: Aluminium hydroxide, magnesium trisilicate, kaolin and chalk (for gastro-intestinal conditions).
Borax (B).
Bromethol (A).
Buchu (C)
Country of origin: South Africa. Importation unnecessary. Substitutes: Sulphanilamide, hexamine, mandelic acid, sod. benzoate, scoparium.
Caffeine (B).
Calcium salts (A).
Calcii gluconas (A).
Calumba (B)
Country of origin: East Africa (Mozambique). Production within the Empire should be encouraged. Substitute: Quassia.
Calx chlorinata (A•).
Camphor (A)
Production within the Empire should be encouraged.
Cantharis and cantharidin (B)
Countries of origin: U.S.S.R., Spain, Hungary, China. Importation unnecessary. Production within the Empire should be encouraged. Substitute: Sinapis.
Capsicum (B)
Countries of origin: Nigeria, Sierra Leone, East India. Restrict use of capsicum to manufacture of capsicum wool. Substitute: Sinapis. Colonial varieties of capsicum may be obtainable.
Carbon dioxid. (A).
Carbon tetrachlor. (A).
Catechu (A).
Chloral hydras (A).
Chlorbutol (A).
Chloroform (A).
Cinchona (B)
Importation should be restricted to the supplies required for the manufacture of quinine. The use of cinchona as a bitter should be discouraged. Production within the Empire should be encouraged.
Cocaina (and salts) (A).
Codeina (A).
Colchicum (A).
Colophonium (A).
Coramine
Nikethamide is identical.
Creosotum (A)
Production within the Empire should be encouraged.
Cresol (A).
Cupri sulph. (A).
Derris (A•).
Digitalis (A).
Ergot (A).
Evipan and Evipan sodium
Hexobarbitone and soluble hexobarbitone are identical.
Ext. hepatis liq. (B)
Importation of liver is under Government control. Injection is more economical and effective.
Ext. malti (B)
Under Government control.
Ext. pituitarii liq. (A).
Ferri carb. (A).
Ferri sulphas. (A).
Filix mas (A).
Galla (A).
Gentian (C)
Almost unobtainable. Substitute: Quassia.
Glycerinum (B)
Substitutes are under investigation.
Hexamina (A).
Hexobarbitone and soluble hexobarbitone (A).
Hydrarg. subchlor. (B).
Hydrarg. perchlor. (B).
Hydrarg. biniodid. (B).
Hydrarg. oxid. flav. (B).
Hyocyamus (A).
Inj. hepatis (A).
Insulin (A).
Iodoform (B).
Iodoxylum (A).
Iodum (B)
Production at home and within the Empire should be encouraged. Substitutes: Proflavine, acriflavine, trinitrophenol, crystal violet, brilliant green.
Ipecacuanha (B).
Preference should be given to manufacture of emetine. Galenical preparations of ipecacuanha as expectorants and emetics are not essential. Production within the Empire should be encouraged.
Jalap and jalap resin (B)
Reserve for pig medication.
Kaolin (A).
Lactose (A).
Linum (B)
Under Government control. Reserve for veterinary practice.
Liq. ferri perchlor. (A).
Liq. formaldehydi (A).
Liq. hydrogen peroxid. (A).
Luminal
Phenobarbitone is identical.
Magnes. carb. (A).
Magnes. oxid. (A).
Magnes. sulph. (B)
Substitute sodium sulphate.
Magnes. trisilic. (A).
Methyl. salicylas (A).
Morphina (and salts) (A).
Mvosalvarsan
Sulpharsphenamine is identical.
Nembutal
Pentobarbital sodium is identical.
Neoarsphenamine (A).
Nikethamide (A).
Novocaine
Procaine is identical.
Nux vomica (A).
Ol. caryoph. (A).
Ol. chenopod. (B)
Substitutes: Thymol, carbon tetrachloride. Production within the Empire should be encouraged. Reserve for veterinary practice.
Ol. lini (B)
Under Government control. Reserve for external use in veterinary practice.
Ol. morrhuae (B)
Under Government control. Substitute veterinary vitaminised oils.
Ol. olivae (B)
Under Government control. Substitutes: Arachis and other suitable vegetable oils are recognised as substitutes in official preparations.
Ol. rapae (B)
Reserve for external use in veterinary practice.
Ol. ricini (A).
Ol. terebinth (A).
Opium (A).
Pancreatin (A).
Paraff. liq. (B).
Paraff. molle (B).
Parathyroid (A).
Pentobarbital sodium (A).
Pepsin (A).
Phenacetin (A).
Phenobarbitone, soluble (A).
Phenol (A•).
Phenolphthalein (A).
Phenothiazin (A).
Physostigmin salicyl. (A).
Pilocarpin nitr. (B).
Pirevan (A).
Pix liquida (A).
Plumbi acetas (A).
Potass. bicarb.† (B).
Potass. bromid.† (B).
Potass. chloras.† (B).
Potass. citras† (B).
Potass. nitras.† (B).
Potass. hydroxid.† (B).
Potass. iodid.† (B).
Potass. permang.† (B).
†Substitute sodium salts where possible.
Procain hydrochlor. (A).
Proflavin (A).
Quassia (A).
Substitute for calumba or gentian where possible.
Quinine salts (A).
Scilla (C)
Substitute: Urginea indica.
Sinapis (A).
Sodii bicarb. (A).
Sodii bromid. (A).
Sodii carbonas (A•).
Sodii citras (A).
Sodii chlorid. (A).
Sodii phosphas (A).
Sodii phos. acid (A).
Sodii salicyl. (A).
Sodii thiosulph. (A).
Sodii sulphas (A).
Sp. aether. nit. (B)
Substitute: Concentrated solution of ethyl nitrite.
Strychnine salts (A).
Sulpharsphenamine (A).
Sulphanilamide (A).
Sulphur (A•).
Suprarenal cort. ext. (B).
Syr. Ferri Phos. Co. (C).
Thyroideum (A).
Urea (A).
Uroselectan
Iodoxylum is identical.
Zinci carbonas (A).
Zinci chlor. (A).
Zinci oxid. (A).
Zinci sulphas (A).
Zingiber (A)
If the official variety is scarce supplies from other sources, *e.g.*, Africa, should be permitted.

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WILD SEEDS AS ANIMAL FEEDING-STUFFS

In a letter to *Nature* (Sept. 21st, 1940) R. Melville, of the Royal Botanical Gardens, Kew, writes:—

"In his discussion of the supply of animal feeding-stuffs[1] Dr. Norman C. Wright does not consider the collection and utilisation of wild seeds such as horse chestnuts, acorns and beech mast. Even if the whole of the present bumper crop of horse chestnuts and acorns were collected, it obviously would not counterbalance the estimated 10 million ton deficiency in imported foodstuffs, but would nevertheless provide a substantial addition to existing stocks which should not be allowed to go to waste.

"When in good condition horse chestnuts and acorns are nutritious foods, their value depending largely on a high starch content. Horse chestnuts can be fed at a rate of ½ to 1 lb. per head, per day, for sheep, or 4 to 10 lb. for dairy cattle, or up to 20 lb. per day for fattening cattle.[2] Most animals soon become used to the slightly bitter flavour of the nuts, though pigs persistently refuse them. They can be fed fresh, but probably the best way of dealing with the nuts would be to collect them at central depots where facilities were available for drying and grinding to a meal. Mouldy nuts should not be fed unprepared. There must be thousands of trees in the country each now bearing bearing ½ to 1 cwt. of nuts.

"Acorns have long been recognised as a valuable food for pigs, and the custom of pannage was strongly established in medieval England. They can be fed in small quantities to sheep and older cattle, but young cattle are susceptible to acorn poisoning, especially in years of drought, and should not be given them. Acorns can be fed fresh or dried. They keep for a long time in good condition if buried in pits in the same way as root crops.

"A leaflet[3] just published by the Ministry of Agriculture gives advice on the use of acorns, horse chestnuts and beech mast as feeding-stuffs. During the war of 1914-18, collections of the nuts were made by schoolchildren and organised by the Board of Education. Similar emergency measures might well be considered this year, but prompt action must be taken if the crop is to be utilised."

(1) Wright, N. C. *Nature*. 146. 251. (1940.)
(2) Anon. *J. Board Agric.* 21. 511-528 (1914.)
(3) "Growmore" Leaflet No. 39. Min. of Agric. (1940.)

H.M. STATIONERY OFFICE PUBLICATIONS

Statutory Rules and Orders, 1941:

*E.P. 24. Medical Register (Temporary Registration) Order, January 1st, 1941	0 1	0 2
*E.P. 31. Feeding-stuffs (Control) (Northern Ireland) Order, January 9th, 1941	0 1	0 2

(*E.P. indicates that the Order is made under Emergency Powers.)

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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"DISEASES OF POULTRY"

To the Editor of the Veterinary Record.

Sir,—A book on poultry diseases entitled "Diseases of Poultry: Their Aetiology, Diagnosis, Treatment and Control," by Ernest Gray, M.R.C.V.S., F.R.M.S., is reviewed in your issue of January 25th. Mr. Gray is well known through his original work on poultry, in particular neurolymphomatosis and related complaints.

Reading carefully through the book confirmed my first unfavourable impressions and the critical tone of the review in my opinion errs on the side of mildness. Judging from the last chapter, it is written partly for practical use by the educated poultry farmer and not merely as light reading for the general public interested in this subject. The mistakes make it impossible for the reader with scientific training and knowledge of the subject, and positively dangerous for pre-graduate students in veterinary science. I refer especially to the chapters on Anatomy and Physiology, which could have been left out with great advantage. Among other questions which crop up are: why so little information is given about diet in relation to disease and why not more up-to-date information about rachitis in young chicks, and why not fuller information about avitaminosis in general. Perosis also is dealt with without mentioning manganese, rice bran or oat husks.

The use of the information in its present form in the chapters about Health, Disease and General Pathology with its very inelegant definition of Health is beyond my comprehension, and the space could have been used to more advantage elsewhere. Hygiene and Sanitation and the actual description of the diseases are the best part of the book and the illustrations are good except for a poor cross-section of the intestinal wall.

I strongly object, however, to the following information. On page 17 Dr. Gray informs us that in the duodenum the glands of Brunner are found. That is certainly the case in mammals but birds have up to now been able to do without them. That the walls of the large intestine bear few or no villi is not correct either, as one of the characteristics of the intestinal tract of birds is that they possess villi and glands of Lieberkuhn over the whole length except for the blind ends of the caeca. The villi are stated to be specially well developed in the beginning of the duodenum and the end of the rectum.

Page 18 gives a description of the histological structure of the liver which is very curious. The central lobular vein is described as a division of the veins from the intestine penetrating each lobule. I understand that the *vena portalis* to be found in the connective tissue between the lobules is the vein supplying the blood and that the central lobular vein drains the blood after passage through the liver capillaries and originates in the liver tissue itself, at least in mammals. Birds have a more primitive structure of the liver and no lobules can be distinguished and no central lobular vein as such exists.

Page 19 tells us that fats exist as fatty acid and glycerols, while this is changed into fatty acids and soaps on page 21.

Irritating as well is that everywhere the blood cells are dealt with, cubic centimetres are substituted for cubic millimetres without adjusting the amount of the blood cells to a unit 1,000 times bigger (pages 27, 28, 119, 120).

On page 31 he surprises us with a description of the lungs as if a fowl was a pig with bronchioli and alveoli complete, while I gather from page 126 that Dr. Gray is aware of the fact that there is a vast difference in structure between mammals and birds. The lungs of the latter are built up on a tubular system to enable a continuous flow of the air necessary for their particular respiratory system. If the space allotted for the subject does not allow an accurate description, why not leave it out entirely?

I am concerned that a work of so sketchy and unscientific a type should be published under the mantle of a ponderous title which in my view is completely unmerited by the text. I request that you will publish this personal criticism in the hope that it will reinforce the opinion voiced in your review.

Yours faithfully,

Tj. Bakker.

45, The Gardens,
Watford, Herts.

January 29th, 1941.

* * * * *

SIDE-BONES

To the Editor of the Veterinary Record.

Sir,—I am afraid the bringing out of the skeleton in the cupboard of those who believe side-bones never cause lameness is perturbing those who hold this tenet. What is the pathology of side-bone?—"The lateral cartilages are of great importance in connection with the vascular system of the foot. The generous blood supply of the foot acts as a water bed or hydraulic buffer in the reduction of concussion and this is materially assisted in the healthy foot by the combined action of the soft structures within and *in particular by the lateral cartilages*. The plantar cushion compressed above and below expands laterally, thus forcing the vessels of the coronary venous plexus against the elastic lateral cartilages" (Hunting's *Art of Horse-Shoeing*). The cartilage in side-bone becomes calcified and loses its elasticity and blood supply. The result is lameness—at any rate in the early stages—just as in the case of splint and spavin. I have just finished treating a 9-year-old horse (vanner) for a month, lame from side-bone. He has now gone to work in a round flat shoe and is doing very well. If he had been kept at work somebody would have been prosecuted for cruelty.

Those who have seen the illustration of side-bone in Reeks's *Diseases of the Horse's Foot* must be lacking in imagination and the application of knowledge if they assert after seeing the great excrescence there, that side-bone in the horse does not cause lameness.

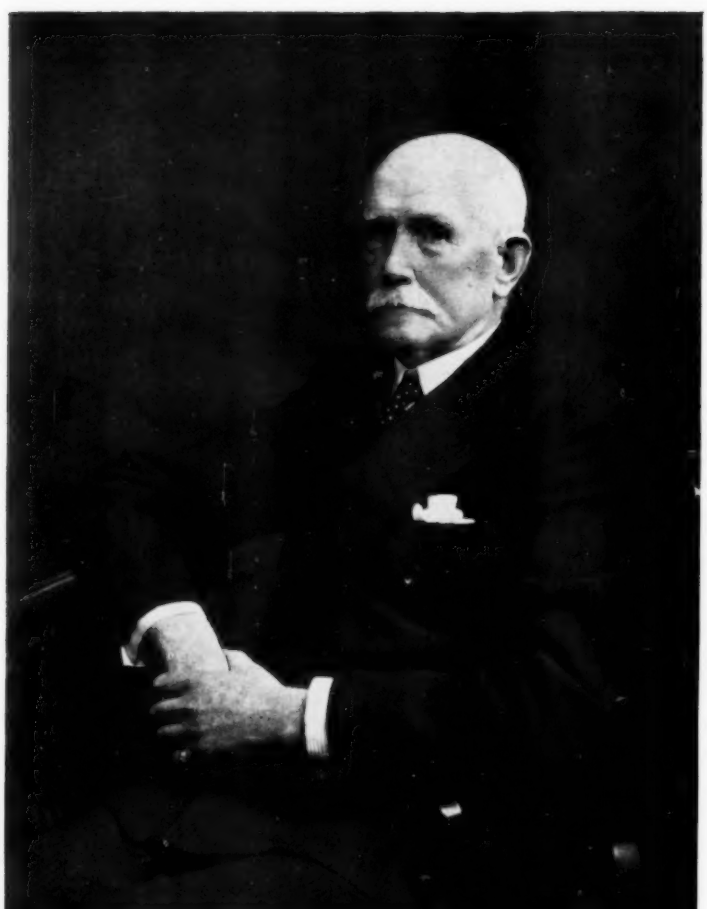
I was intrested in Mr. B. G. Catmur's assertion in your issue of to-day's date that the actual cautery was given up by the senior profession 200 years ago: I well remember reading a few years ago about the application of the actual cautery to the limbs of the human subject.

Yours sincerely,

G. Mayall.

Bolton.

February 8th, 1941.



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1853-1941

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